# EXHIBIT

B – Part 

# H. Hoistway Access Switch

- Install a cylindrical type keyed switch at top terminal in order to permit the car to be moved at slow speed with the doors open to allow authorized persons to obtain access to the top of the car.
- Where there is no separate pit access door, a similar switch shall be installed at the lowest landing in order to permit the car to be moved away from the landing with the doors open in order to gain access to the pit.
- Locate the switch in the terminal floor entrance jamb without a faceplate at an elevation directed by the Architect.
- 4. This switch is to be of the continuous pressure spring-return type, and shall be operated by a cylinder-type lock having not less than a five (5) pin or five (5) disc combination with the key removable only in the "OFF" position. The lock shall not be operable by any key which operates locks or devices used for other purposes in the building and shall be available to and used only by inspectors, maintenance men and repairmen

# I. Scavenger Pump - HPE 4 and 14

- 1. Provide a positive displacement, rotary type pump for the hydraulic elevators. The pump shall have a discharge pressure of 200 psi maximum and capacity of 10 gallons per hour.
- The pump shall be self-priming and self-lubricating. The pump shall be equipped with a 100 mesh screen strainer.
- The pump housing shall be constructed of brass with stainless steel internal parts.
- Mount oil return pump off the pit floor and connect it to the jack unit and the oil tank with copper tubing.

## 2.05 MOVING HOISTWAY EQUIPMENT

#### A. Top of Car Station

- Mount an inspection station on top of car. This device shall be activated by a switch located in car operating panel and shall include:
  - a. Up and down direction buttons

- b. A stop switch
- C. A duplex GFIC receptacle
- d. A work light with wire guard and a "off"-"on" switch.

Document 19-5

When the station is operational, the elevator speed shall not exceed 150 fpm 2. and all operating devices in the cab shall be inoperative.

#### B. **Guide Shoes**

- 1. Provide roller guide shoes with adjustable mounting base, rigidly bolted to the top and bottom of each side of car frame.
  - Roller guides shall consist of set of sound reducing neoprene wheels in a. precision ball bearings held in contact with the three finished rail surfaces by adjustable stabilizing springs. The bearings shall be provided with grease fittings for lubrication.
  - b. Equip roller guides with adjustable stops to control postwise float.
  - Fit the top car roller guides with galvanized, 16 gauge steel guards. C. Approved manufacturer: ELSCO or equal as approved by the Architect.

# Car Frame and Platform

- The car frame shall be made of steel members, with a factor of safety as 1. required by the ASME Code.
- The car platform shall consist of a steel frame with necessary steel stringers, all 2. securely welded together. The frame and platform shall be so braced and reinforced that no strain will be transmitted to the elevator car.
  - Provide platform with two (2) layers of 3/4" marine grade plywood. Cover the underside of the car platform with sheet steel.
- Provide extruded nickel silver thresholds having non-slip surface and guide 3.
- Sound isolate passenger elevator platforms. The support frame shall carry 4. rubber pads on which the platforms shall rest without any connection to the steel frame.

# 5. Allow for the following cab heights:

	Clear Cab Height	Overall Cab Height
PE 1 to 3	9'-6"	10'-6"
HPE 4 and 14 PE 6 to 11	9'-0"	10'-0"
SE 12	11'-0"	12'-0"
KE 13	•	11'-0"
NE 13	•	9'-0"

#### D. Door Operation

- Mount a high speed operator on top of car to operate the car and hoistway door simultaneously.
- The door shall operate smoothly without a slam during both opening and closing cycles. Door velocity shall be adjustable and continuously monitored to maintain minimum floor-to-floor performances and door operation times.
- 3. Use a spirator to automatically close the hoistway door if the car, for any reason, leaves the landing zone.
- 4. The car and the hoistway doors shall open as the car stops at the landing and close before the car can leave the floor.
- Door Contact Equip the car door with an electric contact which will prevent operation of the car unless the car door is in the closed position. The door contacts shall not be readily accessible from the inside of the car.
- 6. Nudging If the doors are held open for a predetermined time (15 to 20 seconds; individually adjustable) by interrupting the light rays/detector field, or by holding the door, or by pressing the door open button, a buzzer will sound and the doors shall start to close at a gentle slow speed.

## 7. Detector Edge:

- a. Provide an infra-red curtain door protection system on all cars.
- b. The doors shall be prevented from closing from an open position if a person interrupts any one of the light rays. When the doors are closing, any interruption of the protective light field shall cause both the car and corridor doors to reverse. The doors shall start to close when the protection system is free of any obstruction.

- C. The infra-red curtain protective system shall have:
  - (1) Height of protective field not less than 72" above the sill.
  - (2) Where horizontal infra-red light beam system is used:
    - A minimum of 40 light beams
    - -Accurately positioned infra-red lights to conform to the requirements of the applicable handicapped code.
  - Modular design to permit on board test operation and replacement (3)of all circuit board without removing the complete unit.
  - Controls to shut down the elevator when the unit fails to operate (4) properly.

#### E. Hoisting and Governor Ropes

- Provide 8 x 19 traction steel hoisting ropes and 8 by 19 or 6 by 19 iron or traction 1. steel governor ropes.
- Secure ends of holsting ropes with adjustable rope shackles with springs, 2. washers, nuts and end cotter pins.

#### F. Safety

- Provide a governor actuated mechanical safety device mounted under the car 1. platform or counterweight and securely bolted to the frame. The safety shall be sized for the capacity and speed noted herein.
  - When tripped, the safety mechanism shall engage the rails with sufficient a. force to stop a fully loaded car or counterweight with an average rate of retardation within the limits given the ASME Code for the capacity.
  - Install a safety marking plate of corrosion resistant metal and, in addition b. to the data required by the ASME Code, indicate the manufacturer's name and manufacturer's catalog designation number for safety.
  - Make provisions to release the safety. In no event shall the safety be C. released by downward motion. Raising the car to reset the safety shall be allowed.
  - Provide an electrical safety plank switch that will interrupt the power to d. the hoist machine when the safety is set. Resetting the plank switch shall be separate from resetting the safety jaws.

#### G. Governor

- Provide a speed governor to operate the safety. Locate traction elevator governors in machine rooms and hydraulic elevator governors in pit.
  - Maintain the proper tension in the governor rope with a weighted tension sheave located in the pit. Springs used to develop the tension are not acceptable.
  - b. Provide rope grip jaws, designed to clamp the governor rope to actuate the car safety upon a predetermined overspeed downward. Rope grip jaws directly coupled to the governor mechanism so as to float with governor movement shall not be permitted.
  - Centrifugal type governors shall trip and set rope jaws within 60 degrees of governor sheave rotation after reaching rated tripping speed.
  - d. Design the governor rope tripping device so that no appreciable damage to or deformation of the governor rope shall result from the stopping action of the device in operating the car safety.
  - e. Provide an electrical governor overspeed protective device which, when operated, shall remove power from the driving machine motor and brake before or at the application of the safety. The setting for the overspeed switches shall be as prescribed in the ASME Code.
    - (1) Locate and enclose the switch to insure that excess lubrication will not enter the switch enclosure.
  - f. Seal and tag the governor with the running speed, tripping speed and date last tested.

# H. Counterweight - Except HPE 4 and 14

- Counterweights shall consist of a steel frame welded or bolted together and necessary steel sub-weights. These sub-weights shall be held within the frame by steel angles or by not less than 2 tie rods passing through holes in all weights. The rods shall be equipped with locknuts, secured by washers and cotter pins at each end to keep the sub-weights in place and prevent rattling.
  - The counterweight shall be equal to the weight of the elevator car and approximately 40% of the contract (specified) capacity.
  - b. Provide the required counterweight screen where no compensation is used.

- The bottom of the counterweight shall have a buffer striking plate and C. means to attach knock-off blocks during rope stretch.
- 2. PE 1 to 3, PE 6 to 11 and KE 13 shall have counterweight safeties.
- 1. Jack Units - HPE 4 and 14
  - Design and construct the jack unit in accordance with the applicable requirements of the ASME Code. It shall be of sufficient size to lift the gross load at the rated speed to the height specified and shall be factory tested to ensure adequate strength and freedom from leakage. No brittle material, such as grey cast iron, shall be used in the jack construction.
  - 2. The jack unit shall consist of:
    - A plunger of heavy seamless steel tubing turned smooth and true to  $\pm$  .15 a. inches tolerance, and with no diameter change greater than .04 inches per foot of length.
    - A stop ring electrically welded to the plunger to prevent plunger leaving b. its cylinder.
    - Internal guide bearing. C.
    - Cylinder head with removable packing gland to facilitate replacement of d. packing.
    - A drip ring below cylinder head to collect oil. ₽.
    - f. A bleeder valve to release gases from the system.
- Work Lights and Receptacles
  - Install a single 110 volt GFIC receptacle in each car in an inconspicuous 1. location.
  - Provide work lights and 110 volt GFIC receptacles at top and bottom of elevator 2. car. Provide lights with wire guards and local switch.

#### K. Compensation

Provide compensation for the weight of the hoistway ropes and unbalanced 1. portion of the traveling cables.

- Compensation shall consist of iron or steel wire ropes attached to the underside 2. of the car and counterweight passing under a weighted guide sheave in the pit.
- Provisions shall be made for equalizing tension in the compensating ropes. The 3. guide sheave shall be provided with bearings of anti-friction bearing metal, ball, or roller type similar to those specified for hoisting machine. The guide sheave shall operate in guides, and the guide structure shall be securely fastened in place. Provide metal guards to prevent ropes jumping off sheave to prevent foreign objects from falling between ropes and sheave grooves and to protect workmen.
- Provide upper and lower limit of travel switches on the compensation guide 4. sheave. When actuated, either switch in the elevator shall be stopped.
- Provide lock down compensators and beams for all cars over 700 fpm. 5.
- Traction elevators shall be equipped with jacketed chain compensation 6. manufactured by SIECOR or equal as approved by the Architect.

#### CONTROL EQUIPMENT AND FEATURES 2.06

#### Wiring

- Provide all wiring and conduit required for the operation of the elevators. 1.
- Wiring, conduit and all fittings shall be in accordance with requirements of Code. 2.
- Run all wiring in galvanized conduit or in metal wireways. 3.
- Flexible metal conduit with ground wiring may be used for short runs from main 4. hoistway wireway to interlocks, fixtures, limit switches and between control panels, motors and brakes.
- Provide traveling cables with black polyvinyl chloride and flame resistant outer 5. cover. Prehang the cables for at least 24 hours with ends suitably weighted to eliminate twisting during operation.
- Provide at least 10% spare in travel cables and in all hoistway risers. 6.
- Provide six (6) pairs of 18 gauge shielded cables in traveling cable for each car. 7. Terminate them to barrier-type terminal strip behind elevator return panel at one end of cable and within a machine room security junction box at the other end.
- Provide video coaxial cable, type RG59U, in traveling cable for each CCTV 8. camera. In addition, provide one pair of 16 gauge shielded cables in traveling cables for each CCTV camera. Leave 10 feet of slack in the cab ceiling space

on one end and 3 feet slack in a machine room security junction box. Note: Two CCTV units will be provided for Elevators PE6 to 11 and one for all other elevators.

- 9. Where the main elevator disconnect devices are not located in the machine room or they are not in the view of the hoist machines, provide necessary auxiliary disconnect means to meet the requirements of the Code.
- B. Group Automatic PE 1 to 3 and PE 6 to 11
  - The operation of the elevators for Group Automatic Operation is defined by the ANSI A17.1 Code (latest edition). The operation shall be controlled by a minicomputer or microprocessor based group supervisory control system.
  - 2. The supervisory system shall, through a dispatching algorithm continually measure the number of corridor calls, their duration, and their direction, the number of loaded elevators, etc., to determine the intensity of traffic and its direction. The supervisory system shall automatically adjust itself to all demands with preference given to the registered calls in the following order:
    - a. Lower Terminal Demands (of any type or duration).
    - b. Long wait "down" calls.
    - c. Long wait "up" calls.
    - d. "Up" calls.

Note: Long wait calls shall be considered those that have been registered for 40 seconds or more.

- In the event that any car is delayed for more than a predetermined time interval
  after it received a start signal, the system shall automatically permit the
  remaining cars in the group to respond to signals and be dispatched in the
  specified manner.
- 4. In the event of failure of the automatic dispatching system, the elevators shall continue to be automatically dispatched by auxiliary means so as to provide emergency service. Failure of the automatic dispatching system shall be indicated by an illuminated signal in the Directors's Control Panel.
- 5. In the event of failure of the landing call button circuit, provide a means to enable the elevators to service each floor without registration of a call within the elevators. Provide an illuminated signal in the Director's Control Panel to indicate that this emergency operation is in effect.

#### 6. Other Items:

- Anti-Nuisance Feature: In the event car loading or operation is not commensurate with the number of car calls registered, all car calls shall be canceled.
- b. Load Weighing: Provide means for weighing passenger load. Design control system to provide dispatching in advance of normal intervals and to provide landing call by-pass when the car is filled to approximately 65% of full-capacity load. Settings shall be individually adjustable from 60-80% of full load.
- c. Main Lobby Operation:
  - (1) Only the "Next" designated car shall have its hall lantern illuminated and its doors open.
  - (2) When a "down" traveling car which is not designated "Next" arrives at the main lobby with a lobby car call registered, it will open its door to discharge the passengers but shall not illuminate its lantern.
    - (a) The doors shall close one (1) second after the light ray is re-established.
  - (3) When a "down" traveling car with no car calls arrives at the main lobby and is not designated "Next", it shall park without opening its doors.
- d. Coincident calls: The dispatching system shall be designed with a 20 second parameter whereby an elevator with a car call will receive priority to answer a corresponding corridor call if it can do so within 20 seconds. If it cannot answer the call within the prescribed time, the first available car shall be assigned. A continuous reassessment of calls shall be made, with the processor having the capability of reassessing five (5) times per second.
- 7. PE 6 to 11 will be designed as student shuttle elevators, arranged to stop at every third level floor 2, 5, 8 and 11.
  - In order to facilitate passenger transfers and optimize elevator operating performance, the elevators are provided with front (West) and rear (East) entrances.
  - b. The students will load the elevators from the West side. The west entrances shall be provided with hall lanterns and two (2) hall call risers.

- c. The students will unload the elevators using the East entrances. These entrances shall have no hall fixtures.
- d. In order to promote a clear traffic pattern, the east entrance shall open first followed by the West entrances after an adjustable time delay.
- e. Initial setting of time delays between the openings of the West and East entrances shall be as follows:

Passenger Load Reading	Delay Time	
No passengers	None	
Up to 25% of rated load	3.0 seconds	
Up to 50% of rated load	4.5 seconds	
Above 50% of rated load	6.0 seconds	

- C. Simplex Selective Collective Operation HPE 4, SE 12, KE 13 and HPE 14
  - Provide simplex selective collective operation from a riser of hall push button stations.
  - 2. The registration of one or more car calls shall dispatch the car to the designated floors in the order in which the floors are reached by the car, irrespective of the sequence in which the calls were registered. The car shall also respond to registered hall calls in the same direction of travel. Car and hall calls shall be canceled when answered.
  - When traveling in the up direction, the car shall stop at floors for which car calls or up hall calls have been registered. It shall not stop at floors where a down hall call only has been registered, unless the stop for that floor is in response to a registered car call, or unless the down hall call is at the highest floor for which any call has been registered. Likewise, a down traveling car shall not stop at a floor where only an up hall call has been registered unless the stop for that floor is in response to a registered car call, or unless the up call is at the lowest floor for which any call has been registered.
  - 4. When the car has responded to the highest or lowest call, and calls are registered for the opposite direction, the car shall reverse direction automatically and respond to those registered calls.

- If the car has no car calls registered and arrives at a floor where both up and 5. down hall calls have been registered, the car shall respond to the hall call corresponding to the direction of car travel. If, after making its stop, a car call is not registered and no other hall calls exist ahead of the car corresponding to its original direction of travel, the doors shall close and immediately reopen in response to the hall call for the opposite direction.
- The car shall maintain its original direction at each stop until the doors are fully 6. closed to permit a passenger to register a car call before the car reverses its direction of travel.

#### Independent Service D.

Arrange elevator controls to permit the car to be removed from the group system and to operate in response to car calls only. The door shall not close until car button for another landing is pressed. Activation of this service shall be from a key switch in the car station service panel.

#### E. Firefighter Operation

- 1. All elevators shall be provided with firefighters controls.
- Contractor shall provide Firemen's Service Operation as follows: 2.
  - Provide Firemen's Emergency Service operation to comply with local a. code.
  - Furnish and install a two-position keyed switch in the hall button faceplate b. at ground floor for each group of elevators and each simplex elevator. The positions shall be clearly identified in red lettering as "NORMAL" and "FIREMEN SERVICE".
  - Related work by Others: Smoke detectors for automatic elevator recall C. shall be provided in all elevator lobbies, machine rooms and at the top of each elevator shaft. Signals from the smoke detectors shall terminate in an external junction box in each Elevator Motor Room (for each group of elevators). Elevator Contractor shall extend the signal from junction box to the elevator control panel. Final connections of the smoke detector signals for Emergency Fire Service Operation to the elevator control system shall be made by the Elevator Contractor.
  - Emergency Fire Service Recall (Phase I) and In-Car (Phase II) Fire d. Service Operation shall be provided for each elevator.

- Once emergency terminal return has been initiated by activation of e. smoke detector or by placing the designated level key switch in the Fire Service position, the following operation shall go into effect for all elevators affected:
  - If traveling away from the Designated Level, elevator shall stop at (1) the next landing floor without opening its doors, reverse direction and proceed non-stop to the Designated Level. If traveling toward the Designated Level, elevator shall continue non-stop to the Designated Level.
  - Door reopening devices for power operated doors, which may be (2) affected by smoke or heat so as to prevent door closure, shall be rendered inoperative.
  - Upon return to the Designated Level, the car and hoistway doors (3)shall open and remain open. The lights in each elevator shall remain on.
  - Emergency stop switch shall be rendered inoperative until the (4) elevator has returned to the Designated Level and placed on Fire Service Operation.
  - All car and corridor call buttons and key switches, shall be (5) rendered inoperative, and all call register lights and directional lanterns shall be extinguished and remain inoperative. Position indicators shall remain in service.
- This operation shall not override Independent or Inspection Service f. Operation which has already been initiated; however, the visual and audible signal shall be activated. The elevator shall recall once it has been released from the aforementioned modes.
- Furnish and install in each elevator a three-position keyed switch marked g. "NORMAL" "HOLD" and "FIREMEN SERVICE". When the keyed switch is placed in the "FIREMEN SERVICE" position, and the Designated Level switch is in the "FIREMEN SERVICE" position, the respective elevator shall be placed on manual control from the car buttons only, overriding all other keyed switches and programming, and in addition:
  - Car and hoistway door operation shall be subject to continuous (1) pressure of the "Door Open" button. Should pressure be released before the doors are completely open, they shall automatically reciose.

- (2) Provision shall be made to allow the operator to, after having made a floor selection, change such selection if he so desires, by pressing a "Reset" button.
- (3) The operator shall be able to change direction of travel when he so desires.
- (4) Once the car and holstway doors are fully opened, the operator shall be able to close them at his discretion by momentary pressure on the "Door Close" button.
- (5) All corridor call buttons and directional lanterns shall remain inoperative.
- (6) The Emergency Stop switch shall remain operative.
- (7) Elevators shall only be removed from In-Car FIREMEN SERVICE operation by moving the emergency key operated switch in the car to the "Normal" position, with the car at the designated level.
- (8) The key shall be removable in each position. The "Normal" "Hold" and "Firemen Service" positions shall not change operation until the car is at a floor with the doors fully open.
- (9) When the switch is in the "hold" position, the car shall remain at the floor with the doors open, and door close buttons shall be inoperative.
- h. Provide a visual signal in each elevator that will indicate when Emergency Terminal Return is in effect.
- i. Provide an audible signal for each elevator which will sound in each elevator when Emergency Terminal Return is in effect. Signal shall be audible from the top of the car. Signal shall be silenced when the elevator returns to the Designated Level and the doors open.
- All keyed switch positions and instructions shall be identified with the appropriate designations in "Red" lettering.
- k. All cover plates for such switches and buttons shall bear the lettering "FOR FIRE DEPARTMENT USE ONLY".
- I. All keyed switches shall be operable by both city wide standard and Fire Department standard keys only.

#### F. **Emergency Power Operation**

- Arrange elevators to automatically return nonstop to a designated floor at full 1. speed on emergency power. By-pass any elevator that fails to operate within a pre-determined time. After all cars return to the designated floor and park with their doors open, make a second attempt to automatically return any cars that were by-passed.
- When all elevators return to the designated floor, the last car shall be assigned 2. to provide limited elevator service to the building. If the elevator is inoperative, select another car to serve the building.
- Provide manual selector switches to override the automatic operation and select 3. any elevator to operate on emergency power.
- When normal power is restored to the building, the elevators operating on 4. emergency power shall stop at the next available floor and be automatically removed from service. Emergency power shall then be disconnected and normal power shall be applied to the elevators.
- Initiation of normal to emergency and emergency to normal power transfers shall 5. be from transfer switch sensing circuit provided under another section of these specifications. The sensing circuit will be a dry contact and will be brought into the machine room. The elevator contractor shall interconnect and interlock all elevators to this sensing circuit.
- Provide manual override controls and emergency power "on" indications in the 6. remote monitoring panel.
- Make provisions to operate all car lights on emergency power through a trickle 7. charged emergency power NiCad battery operation.
- Provide all wiring and conduit to interlock elevators to allow any three (3) 8. elevators to operate at a time.

#### G. Protective Device - HPE 4 and 14

Should a hydraulic elevator stall due to low oil condition, or the elevator fails to 1. reach the landing in the up direction, protective device shall automatically return the elevator to the bottom landing, open the door and shut down the system.

#### Sound Reducing Protection - HPE 4 and 14 H.

Mount sound insulating panels, manufactured of reinforced 16 gauge steel 1. panels with a 1" thick 1-1/2 lbs. core of fiberglass affixed to interior, on all four

open sides of the power unit frame to isolate airborne noise from motor-pump assembly.

- Install a minimum of two sound isolating couplings in the oil line in the machine room between pump and jack. Each coupling shall consist of two (2) machined flanges separated by two (2) neoprene seals to absorb vibration and to positively prevent metal-to-metal contact in the oil line. Build coupling in such a manner that they will be absolutely blow-out proof.
- 3. Install an oil-hydraulic muffler in oil line near power unit. It shall contain pulsation absorbing material inserted in a blow-out proof housing, arranged for inspecting interior parts without removing unit from oil line. Rubber hose without blow-out proof features will not be acceptable.

#### I. Special Features

 In each car install CCTV camera housings or mounting boxes which will be furnished under Division 16. Provide wiring between each unit in the cab to the elevator machine room and terminate in a junction box. Each cable shall be labeled. Installation of connections of the units shall be performed by the security contractor.

## J. Auto Lowering - HPE 4 and 14

- Provide automatic battery powered lowering feature for elevators. In the case of normal power outage, an emergency operation shall be activated, lowering the car to the next available level. The doors shall open automatically to discharge passengers. The elevator shall remain parked with its doors closed and door open button operative until normal power is restored.
  - When normal power is restored, the elevator shall return to normal service only after the completion of the automatic lowering operation.
- The control panel shall be located in the machine room. Include two (2) gel batteries, solid-state controls, charger, monitor lights and a test button.

## K. Automatic Releveling ,

1. Equip the elevators with a floor leveling device which shall automatically bring the car to a stop within 1/4" of floor with any floor for which a stop has been initiated, regardless of load or direction of travel, rope slippage or stretch. Provide an automatic releveling device which shall be arranged to automatically return the elevator to the floor in the event the elevator should creep down a predetermined distance below floor level. This device shall be operative at all floors served, whether the hoistway door or car door is open or closed, or

whether the emergency stop switch has been thrown, provided there is no interruption of power to the elevator.

## 2.07 MACHINE ROOM EQUIPMENT

## A. Hoisting Motors

- 1. PE1 to 3 and KE13: Provide a variable speed reversible alternating current motor with high starting torque and low starting current rated for 50° C (90° F) during continuous operation.
- PE6 to 11 and SE12: The motor shall be of the direct current type, fully reversible, with the necessary high starting torque and low starting current. The motor shall be ruggedly designed with all parts capable of meeting the severe requirements of elevator service.
  - a. All motors shall be rated in accordance with the standards of the AIEE for 50 degree C, 30-minute rated motors. The motor shall have the capacity to operate the elevator with rated contract load at rated speed without overheating. The speed of the motor, when operated with the controller, shall not vary more than 10% of the rated speed under all loads in the capacity range.
- Hydraulic Elevators: Provide an alternating current induction motor, maximum speed of 1800 RPM, 120 starts per hour, continuous rated, 50° C temperature rise.

# B. Machine Beams - Traction Elevators

- Provide support beams, angles, plates, bearing plates, blocking steel members
  to support machine, governors, dead end hitches, deflector and overhead
  sheaves. Note the location of the structural machine beam supports and advise
  if the top of support is not adequate for the machine beams.
- Fit each rope, cable and tape opening in machine room with 3" high 16 gauge minimum, galvanized guard.

# C. Gearless Traction Machine - PE 1 to 3 and PE 6 to 11

 Provide gearless traction machine, specially designed and manufactured for elevator service. The traction driving sheave and brake drum shall be cast integral and bolted securely to the main armature shaft. Securely mount the machine frame, including motor fields, bearing stands and brake on a heavy steel bedplate. The armature shaft shall be supported in ball or roller type bearings.

- The driving sheave shall be cast from the best grade of metal and shall be machined with grooves, providing maximum traction with a minimum of cable and sheave wear.
- 3. Provide machine with a spring applied and electrically released electromechanical brake. Swivel type brake shoes shall be applied to the braking surface simultaneously and with equal pressure by means of helical compression springs. Design brake electromagnet for quick release to provide smooth and gradual application of the brake shoes.
- 4. Span the distance between the car and counterweight with an accurately grooved deflector sheave. Mount deflector sheave to bedplate in machine room. Provide sheave guards to prevent ropes from jumping off grooves.

# D. Geared Traction Machine - SE 12 and KE 13

Case 1:07-cv-06915-DLC

- 1. Provide the worm-geared traction machine with the motor, brake, gears and demountable drive sheave mounted in proper alignment on a common bedplate. The worm shall be accurately machined from steel and provided with a single end, double race ball bearing thrust. The worm gear shall be made from a phosphor bronze rim, accurately cut, fitted and bolted to a cast iron spider. The drive sheave shall be a demountable casting from the best grade of metal with a Brinnell hardness of 215 to 230, and shall be machined with grooves, providing maximum traction with a minimum of cable and sheave wear. Provide means for lubricating the machine. The gear housing shall have a gasketed hole to Inspect the gear.
- 2. Provide machine with an electromechanical brake. The brake shall be spring applied and electrically released. Swivel type brake shoes shall be applied to the braking surface simultaneously and with equal pressure by means of helical compression springs. Design brake electromagnet for quick release to provide smooth and gradual application of brake shoes.
- Span the distance between the car and counterweight with an accurately grooved deflector sheave. Mount deflector sheave to bedplate in machine room. Provide sheave guards to prevent ropes from jumping off grooves.

# E. Motor Control - PE 1 to 3 and KE13

- Speed control for stepless accelerations and decelerations shall be provided from a VVVF power drive via regulated closed-loop speed monitoring control systems.
- Incoming power feeds to each static motor drive unit shall be controlled by a mechanical contactor and shall be disconnected when the elevator is not in motion.

- 3. Each static motor drive unit shall be provided with an isolation transformer on the incoming power feeds and noise reduction chokes in series between the hoist motor and the static drive unit. The level of noise as measured inside the machine room shall not exceed 70 dBa when cars are in operation.
- Voltage and current distortion (notching) introduced into the incoming power supply by the static drive system shall not exceed the recommended limits established in ANSI/IEEE Std. 519-1981 (1).
- 5. A variable voltage variable frequency, solid-state 3-phase motor drive control system shall be provided as the only acceptable method of elevator speed control. The drive unit shall utilize a 3-phase, full wave rectifier and capacitor bank to provide direct current power for a solid-state invertor. The invertor shall utilize IGBT power semiconductors and duty cycle modulation fundamental frequency of not less than one kilohertz to synthesize 3-phase, variable voltage variable frequency output.
- 6. The drive shall:
  - Be configured as a complete digital drive system.
  - Utilize two (2) microprocessors one for power conversion circuitry a 16/32 BIT Microprocessor controlled PWM output and one for drive signal control circuitry.
  - Be totally software configurable through high level language.
  - Interface with external equipment/signals via either discrete Local I/O connections or high speed Local Area Network (LAN).
  - e. Be fully programmable and adjustable carrier frequency to 16KHz through an on-board standard digital display unit and a portable key pad device.
  - c. Be located within the limits of the control cabinet (where system size allows). Separately mounted units shall be installed in an appropriate chassis with hinged swing-out doors with clearances equal to the cabinet width dimensions.
  - d. Use IGBT power devices for quiet operation
  - e. Output frequency of 0-500 Hz.
  - f. Be programmable linear or S-curve acceleration to 999 seconds.

Page 20 of 40

- g. Free run or programmable linear or S-curve deceleration.
- h. Have controlled reversing.
- Have a minimum of 15 preset speeds.
- 7. Operating and Environmental Conditions:
  - a. Service factor 1.0.
  - b. Duty continuous.
  - Humidity 90% rated humidity non condensing.
  - d. Altitude 3300 feet without derate.
  - e. Cooling forced air when required.
  - f. Temperature 0-40°C (104°F) for UL Listing.
  - g. Digital display for:
    - Running output frequency, motor RPM, output current, voltage (Selectable).
    - 2) Setting Parameters values for setup and review.
    - 3) Trip separate message for each trip, last 30 trips to be retained in memory.
- 8. Protective Features:
  - a. Motor overspeed.
  - b. Adjustable current limit.
  - c. Isolated control circuitry.
  - d. Digital display for fault conditions.
  - e. Selectable automatic restart at momentary power loss.
  - f. Manual restart
  - g. Over/Under Voltage.

- h. Line-to-line and line-to-ground faults.
- i. Over-temperature.
- Power Regenerative Converter: A means shall be provided for removing 9. regenerated power from the drive system D.C. power supply. This power shall be dissipated in resistors or return to the three phase A.C. power line. Fallure of the system to remove the regenerated power shall cause the drive output to be removed from the hoist motor. The energy generated during the inverter braking for regeneration shall be performed trough one of the following methods:
  - Power converter PE1 to 3. a.
  - Combined brake unit and discharging resistors. Heat resistant wiring b. shall be used - KE13.

#### Solid-State SCR Motor Drives - PE6 to 11 and SE12 F.

- Provide a static type motor control for PE6 to 11 and SE12. The solid-state 1. motor control unit shall operate with high efficiency and low power consumption, and shall have sufficient capacity to handle peak currents of elevator service.
- All patterns utilized for the control of power drive systems shall be produced by 2. microprocessor based speed commands.
- System motion parameters shall be field programmable with parametric 3. limitations for the system dynamics and be stored on EPROM as a non-volatile External diagnostic tools and/or programming devices are not memory. acceptable.
- The drive control system shall utilize the optimized velocity profile in a dual-loop 4. feedback system based on car position and speed. A velocity feedback device shall permit continuous comparison of car speed with the calculated velocity profile to provide accurate control of the acceleration and deceleration, up to and including the final stop without discomfort, regardless of the direction of travel or load in the car.
- The motor control unit shall be self-contained within its own enclosure. Operate 5. the regulator and control section at low voltages and fully isolate it from the motor control unit.
- The solid-state motor control unit shall contain a coordinated fault protection 6. system which shall accomplish the following:
  - Protect power semi-conductors from failure under short circuit conditions. a.

- b. Protect against ground faults.
- Protect the drive motor against sustained overloads. Ç.
- Provide semi-conductor transient protection. d.
- Provide phase sequence protection.
- Provide the solid-state drive unit with an isolation transformer to completely 7. isolate the unit and the hoist motor from the elevator power supply.
- Provide a filter, sound chokes or other means to ensure harmonic noise 8. associated with SCR drive equipment does not disturb or otherwise adversely affect work areas outside the confines of machine rooms. Harmonic distortion shall not exceed 3% on any voltage at the input on any harmonic frequency. Capacitors utilized with the drive system shall be sized and located to avoid system resonance. Provide all associated electrical apparatus, disconnect switches and materials/labor necessary for a proper and legal upgrade per code.

# Power Unit - HPE 4 and 14

- Provide a self-contained power unit. It shall include: a structural steel outer 1. base, including rank supports; an oil tight drip pan; a floating inner base so that there is no metallic contact for mounting the motor pump assembly; sound isolation panels to enclose the unit and reduce airborne noises.
- Provide a reinforced overhead oil reservoir with a tight fitting tank over the oil 2. control unit. Included in the reservoir shall be an oil fill strainer with air filter and oil level gauge assembly, and a self-cleaning strainer in the suction line.
- Design the pump for oil hydraulic elevator service. It shall be of the positive 3. displacement screw type inherently designed for steady discharge with minimum pulsation and will give smooth quiet operation.
- The drive shall be by multiple V-Belts and sheaves or directly driven by a 4. submersible pump.
- The oil control unit shall be of the manufacturer's own design but shall include 5. relief, safety check, start and slow down valves.
  - Use lowering and leveling valves for drop away speed, lowering speed, a. leveling speed and stopping speed to insure smooth down starts and stops.
  - Provide a valve for manual lowering of the elevator car in event of power b. failure and for use in servicing and adjusting the elevator mechanism.

- c. Design the tank shut-off valve for isolating oil in the power unit tank to ensure each of servicing and adjusting the elevator mechanism without removing oil from the tank.
- All valves shall be accessible for adjustment. All adjustment shall be made without removing the assembly from the oil line.
- H. Control Equipment (All Traction Elevators)
  - Microprocessor based elevator control systems shall be provided. This equipment shall utilize digital logic to calculate optimum acceleration and deceleration patterns for the car to follow during each run. Closed loop distance and velocity feedback shall be provided to monitor the degree to which actual performance of the elevator car conforms with the desired speed profile. Basic systems operating software shall be stored in non-volatile erasable programmable read only memory (EPROM), whereas, field adjustable parameters shall be stored in an electrically erasable programmable read only memory (EPROM).
  - 2. Elevator control relays, contactors, switches, capacitors, resistors, fuses, circuit breakers, overload relays, power supplies, circuit boards, static motor drive units, wiring terminal blocks and related components shall be totally enclosed inside a free-standing metal cabinet with hinged access doors. Control equipment cabinets shall be provided with forced air ventilation to prevent overheating of the electrical components housed therein.
  - 3. All electrical wiring inside the control equipment cabinet, whether done in the factory or at the job site, shall be performed in a neat and workmanlike manner. All field wiring shall terminate at stud blocks provided inside the control equipment cabinet for that purpose. Each wiring terminal shall be clearly identified according to the nomenclature used on the 'as built' wiring diagrams. No more than two (2) field wires may be connected to any single terminal stud. Spare wires shall be tagged according to their point of termination, bundled, and neatly placed a the bottom of the control equipment cabinet.
  - Alphanumeric identification symbols shall be permanently affixed to each electrical component housed within the control equipment cabinet. These identification symbols shall be identical to those depicted on the 'as built' wiring diagrams.
     A 14" or larger CPT diagrams.
  - 5. A 14" or larger CRT display monitor shall be provided inside the elevator machine room for diagnostic purposes. By means of graphic depiction, information available on the screen shall include:
    - An overview of car and corridor calls currently existing within the system.

Page 24 of 40

- b. Elevator operating status.
- C. Elevator position, direction of travel and velocity.
- The open/close status of elevator doors. d.
- The current operational status of each CPU input and output. e.
- A sequential history of faults detected within the control system over the f. previous thirty (30) days.
- In case placement of new elevator control equipment cabinets inside the 6. machine rooms should interfere with direct sight lines between the main line disconnect switch and rotating equipment belonging to the affected elevator, an auxiliary locking disconnect switch shall be provided. The mounting location of this auxillary disconnect switch shall be chosen so as to provide clear sight of the associated rotating equipment.
- The following microprocessor based elevator control systems, with the features 7. and appurtenances described herein, are deemed acceptable. Other control equipment not specifically mentioned herein shall be considered for approval on an individual basis.
  - Computerized Elevator Control Corp. Swift Futura a.
  - Motion Control Engineering, Inc. VVMC-1000-DF b.
  - O. Thompson Microflite Plus C.
  - d. or equal as approved by the Architects.
- Terminal Blocks: Provide terminal blocks with identifying studs on units for 8. connection of board wiring and external wiring.
- Marking: Identifying symbols or letters shall permanently marked on or adjacent 9. to each device on the unit, and the marking shall be identical with marking used on the wiring diagrams. In addition to the identifying marks, the ampere rating shall be marked adjacent to all fuse holders.
- Selector: A floor selector shall be part of the controller microprocessor. Position 10. determination in the hoistway may be through fixed tape in the hoistway or by sensors fitted on each driving machine to encode and store car movement. Design the mechanical features and electrical circuits to permit accurate control and rapid acceleration and retardation without discomfort.

# Controller and Selector - HPE4 and 14:

- 1. The controller shall be designed to give service as herein specified. The controller shall be the microprocessor or programmable controller-based unit mounted in a NEMA Type 1 enclosure. The controller shall be designed to control the starting acceleration, deceleration and stopping of the elevator and to prevent damage to the motor from overload or excessive current. A relay shall be provided, as required, designed to prevent the operation of the elevator in case of phase reversal, phase failure or low voltage in the power supply.
- A selector shall be provided which will perform all functions incidental to the control system which relates to the position and movement of the car in the hoistway.
- 3. All controller wiring shall be neatly formed and tied. The wiring on the back of the panel shall be of the flame-resistant type. The terminals are to have suitable indelible means of identification to facilitate testing and repair. The identification markings shall be coordinated with identical markings on the wiring diagrams. All leads, except the control and signal circuits, shall be provided with either solder or solderless lugs. Control and signals wires shall be brought to accessible washer type or soldered terminals or studs.
- 4. All leads, except the control and signal circuits, shall be provided with either solder or solderless lugs. Control and signal wires shall be brought to accessible washer type or solderless terminals or studs.
- 5. Provide a solid-state starter for the pump motor.
- 6. The new elevator control system shall be provided with diagnostic capabilities for trouble-shooting and monitoring systems operation. As depicted by means of a CRT monitor, LCD display, LED indicator lights, or Field Service Tool, the following information shall be available:
  - Car and corridor calls that currently exist within the system.
  - b. Elevator operating status.
  - Elevator position and direction of travel.
  - d. The open/close status of elevator doors.
  - The current operational status of each CPU input and output.

- 7. In the event diagnostics and monitoring is accomplished via Field Service Tools, the Elevator Contractor shall provide the required Field Service Tools with related control system appurtenances for diagnostic evaluations, system monitoring and field adjustments.
  - Instructions for proper use of such diagnostic tools and/or equipment shall be provided with all coding and other operational requirements.
  - b. Diagnostic tools, instructions and/or other material provided shall be maintained by the installation contractor, updated and calibrated under the service agreement. Should the agreement be canceled for any reason by either party, maintenance and updating of diagnostic tools shall be provided to the Owner at the Contractor's cost plus established profit margin, based on the mechanic's hourly wage charge. The Owner may request field and technical instruction be provided by the original installation contractor or manufacturer for proper servicing by other qualified elevator company personnel. The established cost plus profit, as previously specified, shall be applicable for the life of the new systems provide.

## J. Microprocessor Documentation:

- Elevator Contractor shall provide and/or obtain complete information on systems' design, component parts, installation and/or modification procedures, adjusting procedures and associated computer conceptual logic circuitry and field connection.
- 2. Provide fully detailed and annotated computer printouts of each program utilized in the project after final acceptance by Owner and Consultant.
- 3. Provide microprocessor upgrading and/or modifications to programs that have been designed to enhance the operation of the equipment for a period of 10 years after project approval.

#### K. Piping - HPE 4 and 14

- 1. Provide all necessary pipes and fittings to connect the power unit to the jack. Use minimum Schedule 80 steel pipe.
- For remote machine rooms run the hydraulic pipe in a trench provided by others.
   The pipe shall be welded and wrapped with a protective tape coat. Enclose the pipe in a schedule 40 PVC sleeve which shall run from the machine room to the hoistway.
- Adequately support the full run of pipe with isolation type support.

# Mainline Strainer - HPE 4 and 14

Provide a mainline strainer of the self-cleaning, compact type, equipped with a 1. 40 mesh element and installed in the oil line. Design the unit for 400 psi working pressure.

#### Equipment Isolation

Provide sound reducing vibration isolation elements at all support points of 1. elevator controllers, solid-state motor drives, isolation transformers and hoisting motors. The elements for controllers, solid-state motor drives and isolation transformers shall be similar to double deflection neoprene-in-shear mounts, as manufactured by Mason Industries. Elements between the hoisting machine (unitized base) and machine support beams shall be similar to triple (3) layer ribbed neoprene pads, separated by appropriate steel shims as manufactured by Mason Industries. All bolts through isolation elements, where necessary, are to incorporate resilient washers and bushings.

#### 2.08 **FIXTURES**

#### A. Main Car Operating Panel

- Provide a main car operating panel on the inside return front panel of all 1. elevators as shown on the Architectural drawings.
- The call buttons provided for each floor served shall cause the car to travel to the 2. floor on momentary pressure of the call button.
- The call buttons shall become individually illuminated as they are pressed. The 3. button lights shall be extinguished as the calls are answered.
- The panel shall include: 4.
  - a. A call button for each floor served
  - b. Door open/Door close buttons
  - C. "Alarm" button
  - d. "Emergency Stop" button
  - A hands-free telephone e.

- f. The locked service cabinet shall be flush and contain the key switches required to operate and maintain the elevator, including, but not limited
  - Independent service switch (1)
  - (2) Light switch
  - (3) Fan switch
  - (4) GFIC specification grade receptacle
  - (5) A port for a hand-held service tool.
- 5. Provide a swing type one-piece faceplate with heavy duty concealed hinges.
  - Passenger elevator car operating panels shall be provided as shown on a. the architectural drawings.
  - Service elevator main car operating panel shall be flush mounted with b. hairline joints.
- Auxiliary Car Operating Panel Except SE12 and KE13 B.
  - Provide an auxiliary car operating panel that contains those buttons normally 1. used by a passenger, i.e., call buttons, door open button, alarm button and shall be of the same design as the main operating panel.
- C. Car and Hall Position Indicators
  - The position of the car in the hoistway shall be indicated by the illumination of the 1. position Indicator numeral corresponding to the floor at which the car has stopped or is passing.
  - Provide 2" high LED type position indicator with direction arrows for SE 12 and 2. KE 13. Locate indicators in the main car operating panel without a separate faceplate and in each hall lantern at all floors.
  - 3. Passenger elevators shall have horizontal position indicators with direction arrows over each cab entrance and over the hoistway entrance at the Ground Floor as shown on drawings. Hall position indicators shall be provided in the Ground Floor Lobbies for all elevators except HPE4 and HPE14. Engrave 1-1/2\* high floor indications and direction arrows through faceplate and fill with milk white plastic lettering style shall be as shown on the architectural drawings. Fit indicators with LED lights enclosed in light-tight compartment.

PE6 to 11 shall have car position indicator over the East entrance only. 4.

#### D. Car and Hall Call Buttons

- The buttons shall become individually illuminated as they are pressed and 1. extinguished as the calls are answered.
  - The buttons shall be stainless steel convex type with LED call registered a. lights.
  - The finish of button shall match its respective fixture. b.

#### E. Hall Call Stations

- Provide up and down buttons at intermediate landings and a single button at 1. each terminal floor. All fixtures shall be stainless steel No. 4 finish.
- Include firefighter key switch in the main lobby level station. 2.

#### Hall Lanterns - Passenger Elevators F.

- Provide a visual and audible signal at each entrance to indicate which car shall 1. stop in response to the hall call. The lanterns with up and down indications at intermediate landings and a single indication at each terminal landing shall sound once for the up direction and twice for the down direction. Provide adjustable signal time (3 to 10 seconds, with 1 second increments) to notify passengers which car shall answer the hall call.
  - Provide hall lanterns as shown on the drawings. Lanterns shall have electronic chimes with adjustable sound volume.
  - Locate hall lanterns vertically mounted as shown on the architectural b. drawings. PE 6 to 11 shall have hall lanterns over the West entrances only.
  - Refer to hall position indicators specified in this Section per additional C. requirements for SE12 and KE13.

#### G. Emergency Lighting and Alarm Beil Fixture

1. Provide an emergency lighting system to power the selected two (2) cab lights or an emergency lighting fixture and alarm bell as selected by the Architect. Emergency power system shall provide continuous operation of light bulb for at least four (4) hours and sound alarm bell for one (1) hour.

- Provide nickel cadmium batteries and a charger and mount the power pack on 2. top of car.
- Arrange for completely automatic operation when normal power is interrupted. 3.
- H. Lobby Controls and Monitors - All Cars
  - Provide an elevator control and information management system in Rm. 1-181, 1. near the FCC as directed by the Architect.
    - Microprocessor based elevator control equipment shall be provided with a. remote systems monitoring as well as provisions for interactive management of historical data analysis, report generation, and floor lockout features described herein. Information shall be accessed and graphically displayed on CRT monitors through a menu-driven software program.
    - b. Remote systems monitoring shall provide a visual display of information for each elevator as further described.
      - (1) Current elevator position and direction of travel.
      - (2) Current mode of operation.
      - Registered car calls. (3)
      - (4) Registered hall call assignments with estimated waiting times and actual waiting times.
      - (5) Elevator door position.
      - Events, faults or malfunctions that have occurred within the (6) system.
      - (7) Operational status of the load weighing device.
    - C. Historical data complied within a remote PC terminal shall be directly accessible through the interactive software program. The format according to which this information is sorted and then displayed and/or printed-out in report form shall depend upon which of the following criteria is selected by the user.
      - (1) Information to be sorted and displayed on a per call basis during a specific time period.

- (2)Information to be sorted and displayed on a per floor basis during a specific time period.
- Information to be sorted and displayed for group operations during (3)a specific time period.
- Information to be sorted and displayed on a per car basis during a (4) specific time period.
- Information sorted and displayed on an event basis during a (5) specific time period.
- (6) Information sorted and displayed for average half call waiting time during a specific period of time.
- (7) Information sorted and displayed for incremental increases in hall call waiting time during a specific period of time.
- d. Parameters monitored in order to compile data base information for interactive systems management shall be as follows.
  - (1) All events, faults or malfunctions occurring within the system.
  - (2) Both up hall call and down hall calls registered.
  - (3) Car calls registered on a per car basis.
  - (4) Activation of both up peak and down operation.
  - (5) Activation of load by-pass operation on a per car basis.
- interactive systems management software shall be configured to e. interface with access card reader device and corridor key-switches in such a manner as to create system for building security that can be controlled and monitored from a remote PC terminal. In addition to displaying the security plan currently in effect, the menu-driven software shall allow the user to perform the follow program revisions.
  - Deactivate hall calls on individual floors entirely or, according to (1) specific time clock settings.
  - (2) On an individual elevator basis, deactivate certain car calls entirely or, according to specific time clock settings.
  - Modify the time clock setting specified for the security features (3)described herein.
  - Disable security features entirely. (4)

- Provide a hard copy laser printer with provisions for automatic timing f. activation to record operational events on a manual selection or automatic basis.
- The system shall also include: g.
  - LED type positions indicator for the hydraulic elevators (1)
  - (2) Emergency power control switches and indications
  - (3)Car-to-lobby switches
  - (4) Master communication station
- 1. Fixture Attachment, Finish and Design
  - Graphics shall be selected by the Architect. 1. .
  - Refer to drawings for special fixture faceplates and other design requirements. 2. Where no special design is shown the faceplates shall be 1/8" thick stainless steel with No. 4 finish.
  - Mount passenger elevator fixtures with concealed fasteners. The screw and key 3. switch cylinder finishes shall match faceplate finish.
  - Coordinate with custom architectural requirements specified separately. 4.
  - Provide all lettering, floor numbers, direction arrows, symbols, etc. in font as 5. shown on the architectural drawings.

#### 2.09 PERFORMANCE AND DESIGN REQUIREMENTS

- Passenger elevators shall be adjusted to meet the following performance requirements: A.
  - Speed: within 5% of rated speed under any loading condition. 1.
  - 2. Leveling: within 1/4" under any loading condition.

3.	Door Operating Times:	Opening	Closing
	PE 1 to 3	1.9 sec.	2.9 sec.
	HPE 4	2.3 sec.	2.8 sec.
	PE 6 to 11	2.5 sec.	3.0 sec.
	SE 12	3.3 sec.	5.0 sec.
	KE 13	2.7 sec.	4.5 sec.
	HPE 14	1.7 sec.	2.4 sec.
	(including advance passenger morning time)		

(including advance passenger morning time)

4. Door dwell time for hall calls:

4.0 seconds (inclusive

of advance

passenger notification time)

Door dwell time for car calls:

3.0 seconds

- 5. Hydraulic Pressure: 400 psi maximum
- Maintain the following ride quality requirements for the passenger elevators: В.
  - 1. The speed of the car roller guides shall not exceed 500 rpm.
  - 2. Noise levels inside the car shall not exceed the following:
    - Car at rest with doors closed and fan off 40 dba. a.
    - b. Car at rest with doors closed, fan running - 55 dba.
    - C. Car running at high speed, fan off - 50 dba.
    - d. Door in operation - 60 dba.
  - Horizontal accelerations, peak to peak shall not exceed 15 milli g in the 3. frequency range of 1 to 10 Hz.
  - Amplitude of acceleration and deceleration shall not exceed 4 feet per second, 4. per second. A sustained jerk shall not be more than twice the acceleration.

#### JoAnne Bonacci

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1:07-cv-6915

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Travelers Casualty and Surety Company

**Document** 

Number:

15

#### **Docket Text:**

DECLARATION of JoAnne M. Bonacci, Esq. in Opposition re: [9] MOTION to Dismiss *Complaint*.. Document filed by Travelers Casualty and Surety Company. (Attachments: # (1) Exhibit Exhibit 1# (2) Exhibit Exhibit 2# (3) Exhibit Exhibit 3# (4) Exhibit Exhibit 4# (5) Exhibit Exhibit 5# (6) Exhibit Exhibit 6 -pt 1# (7) Exhibit Exhibit 6 -pt 2# (8) Exhibit Exhibit 7# (9) Exhibit Exhibit 7- pt2# (10) Exhibit Exhibit 8# (11) Exhibit Exhibit 9# (12) Exhibit Exhibit 10# (13) Exhibit Exhibit 11# (14) Exhibit Exhibit 12# (15) Exhibit Exhibit 13# (16) Exhibit Exhibit 14# (17) Exhibit Exhibit 15# (18) Exhibit Exhibit 16# (19) Exhibit Exhibit 17# (20) Exhibit Exhibit 18# (21) Exhibit Exhibit 19# (22) Exhibit Exhibit 20# (23) Exhibit Exhibit 21# (24) Exhibit Exhibit 22# (25) Exhibit Exhibit 23# (26) Exhibit Exhibit 24# (27) Exhibit Exhibit 25# (28) Exhibit Exhibit 26# (29) Exhibit Exhibit 27# (30) Exhibit Exhibit 28)(Rogers, Eli)

# 1:07-cv-6915 Notice has been electronically mailed to:

David Abramovitz dabramovitz@zdlaw.com

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Timothy B Froessel tbfroess@hklaw.com

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**Document description:** Exhibit Exhibit 3

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**Document description:** Exhibit Exhibit 4

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**Document description:** Exhibit Exhibit 5

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Document description: Exhibit Exhibit 6 -pt 1

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**Document description:** Exhibit Exhibit 8

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Original filename:n/a

# **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-11] [595168058416e13b53f0198ba8faf02b85eb5e0767eb1b11dd8631a10a4432232 6b726903e93363354dda42b72113f0703e0e04b400cf63ed6795cca0216cfa6]]

**Document description:** Exhibit Exhibit 10

Original filename:n/a

#### **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-12] [65c8562cec836301170d2c110e9051f9301129b73f9174cd1f380374a0dd43f83 a212d37b25cd09e6fce49f5df11c1119262ebad981756954653a0e168d82ec5]]

Document description: Exhibit Exhibit 11

Original filename:n/a

## **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-13] [34b5ad935124d0adb87b850f071cb1f691be3a0c878a3ea1e03a918f43d9c4ac7556377885f6ab71a29ee44a9ea5214ef73ce31994ce50fd0e8b2b6073789574]]

**Document description:**Exhibit Exhibit 12

Original filename:n/a

## Electronic document Stamp:

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-14] [248a8857d7453e3200e18cfa0d2810af27eddb00ef2ea12565e93581e51b01088 51d350dc458e23e9d4d99af09ce0354a614fe47204b470699c2b7e984ba908c]]

**Document description:** Exhibit Exhibit 13

Original filename:n/a

# **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-15] [49de198a39d457e2db211998df56687d8755b2b4c3fca0fee3ecc696777c3b6a0 9917a1eef0edfb68b2fbc0aed071650700b16476ebaf8401de026cf195c550c]]

**Document description:** Exhibit Exhibit 14

Original filename:n/a

# **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-16] [2534fc9e9e78356dec28a66092442a77dd83d75ec0db1c709025c230ccef7f272 19126c1e3b606f7e024ee3430d0fc7a08d6ad4c5eb91fb459bc9b77b6de48e9]]

**Document description:** Exhibit Exhibit 15

Original filename:n/a

# **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-17] [687d3512d75846bb8a055bda4f2f18e174997ea55124a2f2d62227e788922c150 a31cf320a2ef84de13c492e7d9f3da3fea06a131f408c2a9a1c2c8039b745c9]]

Document description: Exhibit Exhibit 16

Original filename:n/a

## **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-18] [491cea22b2537f4b54f50c8641b3b06aafa6817834ae7c35b51234ddf9c0e2d5b e3f66e102c96667baf627b0fe87fceaf9be87f7137762238a223eb2698c793a]]

**Document description:** Exhibit Exhibit 17

Original filename:n/a

# **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-19] [8b50515e2d3c53fbb7f0a2c122d5713192828386e65761234b8c72bece62e3f30 12e76f85c6c4afe5d7d8a95b6568a7a65dbe9ae6dc5cbbd8f58303d371a1909]]

**Document description:** Exhibit Exhibit 18

Original filename:n/a

## **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-20] [83863dea446ad871feb11b455ddb26bd825014c080ea93573c6613097c0e7c4bf 0011c1795a1b2cb1d21526adfc37d033e9a3962e662ab5b73c142c63b83c562]]

**Document description:** Exhibit Exhibit 19

Original filename:n/a

## **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-21] [267f8a38176cf1a7cd1e6f066ede8b76d78777b35fac99315938f7238c82f21ca b752c9ee78101ef1cef6d1e5faa78ad74ce9389d32d0d264f021df1b03efc42]]

**Document description:** Exhibit Exhibit 20

Original filename:n/a

## **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-22] [8920bfa9e7572bc90f32a422eaaa68a8f766d3817f6e0852788b00f3c6f981853 9a0bf979164f19a91a1535c929183775c0e02f558ff2c24b4c9374d2f4cc3aa]]

**Document description:** Exhibit Exhibit 21

Original filename:n/a

## **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-23] [1c7abc8e16f885267f26efc6fee485a676c5be3ecdb591c38d2867cba0688798a

42fd90ba399bf275c0eb189a71ba76efc5e8532c914d3ed6208a8a550dc8b40]]

**Document description:**Exhibit Exhibit 22

Original filename:n/a

# **Electronic document Stamp:**

[STAMP deecfStamp ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-24] [5d536ff59475f1be805d9c2108bc470574596057ba70b867aa33d9c667c8470e1 9a65384f6c9080c17a999e3489ba2b4a4eca367318d22f979986fc4a8a73bc9]]

**Document description:** Exhibit Exhibit 23

Original filename:n/a

# **Electronic document Stamp:**

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-25] [2dabe40107032c50fd26f73674af27774384e1b571916722f7e38d5a9439ae058 d44218b7bb52ab2167996b98c335ee35cae150ae2fc8e085f6d081cd1c3ab56]]

**Document description:** Exhibit Exhibit 24

Original filename:n/a

# Electronic document Stamp:

[STAMP dcecfStamp\_ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-26] [15918cb16553cf38ccc29ac8728fe10390c869ffbaf0f1a0f037c35570b5a74c9 2e4458e5cd3e2654eb4ef2e891cc892c39b5cbad0ecba842c0784a8781569a1]]

**Document description:** Exhibit Exhibit 25

Original filename:n/a

# **Electronic document Stamp:**

[STAMP deecfStamp ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-27] [47078ad40e7473949cc9f5c1eed015dfd0f1feff811764e9037de9cefe9ccac29 0d7d74d3861cfe885d628c770beb7f7fd14f776675f0ef612a0555e8c3994a9]]

**Document description:** Exhibit Exhibit 26

Original filename:n/a

## **Electronic document Stamp:**

[STAMP dcecfStamp ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-28] [3139ecad4e76480f181e8991973d30085966f1071951507c556dc758d1e5433cb 590bcd657a50021b10b3319ceeaadf676a3c2ec33ec7b4326a44ef1b664c709]]

**Document description:** Exhibit Exhibit 27

Original filename:n/a

## **Electronic document Stamp:**

[STAMP deecfStamp ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-29] [8cf9b1be9cd76f86fc42d9110cd2eb69d5bd2e777fc8b734a594b0c6416439dd9 f195a10c79164dfce92fe92fde1195ee8e34181e6300695a86f94da9c00229b]]

**Document description:** Exhibit Exhibit 28

Original filename:n/a

# **Electronic document Stamp:**

[STAMP dcecfStamp ID=1008691343 [Date=10/16/2007] [FileNumber=3908496-30] [01a654f7671ebd5498d58a45b32155e4250c1ddab55a7c0882cdab54edf776136 leedf3b7a5828b56e3a5a5d4e618e388d5e0967ea0b21e2f4e5d4314501812f]]

#### JoAnne Bonacci

From: NYSD\_ECF\_Pool@nysd.uscourts.gov

Sent: Wednesday, October 17, 2007 12:03 AM

To: deadmail@nysd.uscourts.gov

Subject: Activity in Case 1:07-cv-06915-DLC Travelers Casualty and Surety Company v. Dormitory Authority

State of New York et al Memorandum of Law in Opposition to Motion

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## **U.S. District Court**

# United States District Court for the Southern District of New York

# Notice of Electronic Filing

The following transaction was entered by Dreifuss, David on 10/17/2007 at 0:03 AM EDT and filed on 10/17/2007

Case Name: Travelers Casualty and Surety Company v. Dormitory Authority State of New

York et al

**Case Number:** 1:07-cv-6915

Filer: Travelers Casualty and Surety Company

**Document** 

Number:  $\frac{16}{}$ 

## **Docket Text:**

FIRST MEMORANDUM OF LAW in Opposition re: [9] MOTION to Dismiss *Complaint*.. Document filed by Travelers Casualty and Surety Company. (Dreifuss, David)

# 1:07-cv-6915 Notice has been electronically mailed to:

David Abramovitz dabramovitz@zdlaw.com

David Craig Dreifuss DDreifuss@dbplawfirm.com, jbonacci@dbplawfirm.com

Timothy B Froessel tbfroess@hklaw.com

## 1:07-cv-6915 Notice has been delivered by other means to:

Joanne M. Bonacci Dreifuss, Bonacci & Parker, LLP One Penn Plaza 36th Floor New York, NY 10119 The following document(s) are associated with this transaction:

Document description: Main Document

Original filename:n/a

**Electronic document Stamp:** 

[STAMP dcecfStamp\_ID=1008691343 [Date=10/17/2007] [FileNumber=3908499-0] [9006c240ef3a538841d38a4adef843ef46d3b4eab9179046b965b28b3cca200bcc cf089dfb353818dc81233047d48baaf054e688327d0f52e8ac21fc4ee9a127]]